

IN THE CLAIMS:

Please cancel claims 1- 20 and add new claims 21-32 as follows:

1-20. (Cancelled)

21. (New) An apparatus for on-farm separation of at least one milk component from milk, the apparatus comprising:

- (i) a robotic milking device having a stall for milking a dairy animal and which is adapted to allow one dairy animal to freely enter at any time;
- (ii) a first holding vessel connected to the stall for receiving successive measures of milk from successive dairy animals;
- (iii) at least one first separation device connected to said first holding vessel for receiving the successive measures of milk and separating each measure of milk into said at least one milk component and a residual milk measure, and
- (iv) a bulk tank connected to each separation device for accumulating the successive residual milk measures.

22. (New) The apparatus of claim 21 further comprising:

- (i) a second holding vessel connected to said stall for receiving successive measures of milk from respective dairy animals in alternation with the first holding vessel;
- (ii) at least one second separation device connected to said second holding vessel for receiving the respective measures of milk and separating each measure of milk into said at least one milk component and a residual milk measure, and
- (iii) a conduit for passing residual milk measures from the second separation device to the bulk tank.

23. (New) The apparatus of claim 22 wherein at least one of said separation devices is a modular cartridge unit incorporating a matrix for removing at least one specific milk component.

24. (New) The apparatus of claim 21 wherein at least one of said separation devices is configured to enable for substitution or replacement of cartridges.

25. (New) The apparatus of claim 21 wherein at least one of said separation devices is configured to enable the cleaning or elution of cartridges.

26. (New) A method for on-farm separation of at least one milk component from the milk produced by a plurality of dairy animals, comprising the steps of:

- (i) extracting a measure of milk from one of said dairy animals in a stall of a robotic milking device adapted to allow one dairy animal to freely enter at any time;
- (ii) passing said measure of milk to a holding vessel feeding at least one separation device;
- (iii) operating each said separation device to separate said measure of milk into said at least one milk component and a residual milk measure, and
- (iv) repeating steps (i) to (iii) in turn for each of said plurality of dairy animals.

27. (New) A method for on-farm separation of milk components from the milk produced by first, second and third dairy animals sequentially milked using the apparatus of claim 22, comprising the steps of:

- (i) extracting a first measure of milk from the first dairy animal in said stall;
- (ii) passing said first measure of milk to said first holding vessel;

- (iii) operating each said first separation device to empty the first holding vessel and to separate said first measure of milk into at least one first milk component and a first residual milk measure, while extracting a second measure of milk from the second dairy animal in said stall and passing said second measure of milk to the second holding vessel, and
- (iv) operating each said second separation device to empty the second holding vessel and to separate said second measure of milk into at least one second milk component and a second residual milk measure, while extracting a third measure of milk from the third dairy animal in said stall and passing said third measure of milk to the first holding vessel.

28. (New) The method of claim 26 wherein at least one of said components separated by the method is lactoferrin.

29. (New) The method of claim 26 wherein the dairy animal is a cow.

30. (New) The method of claim 26 wherein at least one of said separation devices performs ultrafiltration.

31. (New) The method of claim 26 wherein at least one of said separation devices performs chromatographic separation.

32. (New) The method of claim 26 wherein at least one of said separation devices performs dialysis.